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SERIAL NO. 09/788,053  
PATENT

### REMARKS

The Examiner objected to the specification because of several informalities. Applicant has amended page 6, lines 14 and 18 and page 7, line 17 to correct minor editorial problems. The Examiner also objected to the abstract, stating that "be they" on page 1, line 3 was grammatically incorrect. Applicant respectfully submits that the use of "be they" in this sentence is grammatically correct. This structure relates the list following "they" to the "abutting surfaces" that precedes "be." The list is of types of abutting surfaces.

Claims 1-22 are pending in the application. Claims 1-3 have been amended. Reconsideration is respectfully requested.

Claim 1 has been amended to include the limitation of being "practiced on a computer" as the method is not intended to be implemented by hand. In light of the decision of the Board of Patent Appeals and Interferences in this matter, this additional limitation is intended to direct Claim 1 to statutory subject matter within the meaning of 35 U.S.C. §101. Reconsideration is respectfully requested.

Claim 2 has been amended to independent form to include the limitations of original Claim 1. Claim 3 has been amended to correctly depend from independent Claim 2. Claims 4, 6-8, 11, and 12 depend from Claim 3. Claims 13-15 depend from Claim 12. In light of the amendment to Claim 2 and the following remarks, reconsideration of Claims 2, 3, 4, 6-8, and 11-15 is respectfully requested.

Claims 4-11 and 15-22 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not describe din the specification in such a way as to enable one skilled in the art to make and/or use the invention. The Examiner specifically

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lists: determining the boundary of boundary surface, determining a 1-dimensional mesh at least twice as fine as the first trunk mesh, identifying pairs of nodes, moving a node from each pair to boundary, highest quality mesh elements, determining which node of each pair is closest to the boundary, and determining if the boundary spans the diagonal. Applicant respectfully submits that these limitations are described in the specification with sufficient detail to enable one skilled in the art to practice the invention. Applicant respectfully submits that the "boundary surface" and its boundaries are clearly and sufficiently described in the specification on page 5, lines 18-19, as the intersection of the trunk and branch. Applicant also submits that the first trunk mesh and its characteristics have been clearly and sufficiently described in the specification on page 6, lines 15-17 and line 23 and that once the fineness described in the specification (able to resolve all small features of the trunk and graft/boundary surface) has been achieved in the first trunk mesh it is a simple matter to divide that fineness in half to make the determination of a 1-dimensional mesh. Further, Applicant submits that the "pairs of nodes" are identified based on their existence on the first trunk mesh at points discernable by the intersection (identified by using a simple three-dimensional intersection routine) of the 1-dimensional mesh with the first trunk mesh, as described in the specification beginning on page 6, line 25 and continuing onto page 7, in conjunction with Figure 2. The specification, continuing from page 7, line 4, under the heading of SMOOTHING THE MESH TO THE LOOP, in conjunction with Figure 3, describes moving nodes from the determined pairs to the boundary. Quality factors relating to the mesh elements are given throughout the specification and incorporated references. Ways to improve the quality are described in the specification beginning on page 8; these quality improvements also provide insight

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into the measurement of the quality. Some examples of the achievement of high quality through the use of the present invention are illustrated in Figure 7 (page 9, lines 13-15) and Figure 10 (page 9, lines 19-23). Applicant respectfully submits that the determination of closeness to one object to a second object (such as the closeness of a node to a boundary) is a matter of measurement and/or observation, as is the determination of whether or not a boundary spans the diagonal (as can be ascertained from the specification on page 7, lines 11-12, in conjunction with Figure 3.). For these reasons, Applicant respectfully submits that Claims 4-11 and 15-22, and any claims that depend therefrom, are allowable.

Claims 1-22 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner specifically points out the use of the term "proximal" in independent Claims 1 and 12. When one object is "proximal" to a second object, the first object is situated near the second object. The range of proximity can be discerned from the specification and its incorporated references. In the instances "proximal" does not refer to the location of the second mesh relative to the first mesh as the Examiner suggests, but refers to the location of a portion (of the first mesh) relative to the boundary surface (as described in the specification on page 5, lines 18-19). The Examiner also specifically points out the use of the term "substantially conform" in the claims. The amount of conformity can also be discerned from the specification and its incorporated references. For example, one aspect of conformity is described on page 9, lines 16-18, in conjunction with Figure 8. The Examiner also specifically points out the use of the term "at least twice as fine" as used in Claims 4 and 15. As previously

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discussed, fineness is described in the specification and it is a simple matter to multiply that by two (2) in order to achieve twice the amount. For these reasons, Applicant respectfully submits that amended Claims 1-22 are allowable.

The Examiner has also provided some Claim Interpretation. Applicant respectfully submits that the foregoing addresses the interpretations that the Examiner has supplemented herein. Therefore, Applicant respectfully requests that the claims be interpreted with reference to the explanations provided herein.

Claims 1, 4, 6, 12, 15, and 17 stand rejected under 35 U.S.C. §102(e) as being anticipated by Dohrmann et al (U.S. Patent Number 6,560,570), hereinafter "Dohrmann." The assignee for the present application is Sandia Corporation. The assignee for Dohrmann is also Sandia Corporation. The subject matter relied upon and the present invention were subject to common assignment at the time the present invention was made. Therefore, Dohrmann is disqualified as prior art against the present invention. Applicant respectfully submits that Claims 1, 4, 6, 12, 15, and 17, and any claims that depend therefrom, are in allowable form and requests reconsideration.

Claims 1-22 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dohrmann in view of Staten et al (State et al, "BMSweep: Locating Interior Nodes During Sweeping", Proceedings of the 7<sup>th</sup> International Roundtable 98, pages 7-18, October 1998), hereinafter referred to as "Staten," and Applicants Own Admission, hereinafter referred to as "AOA." As described above, Dohrmann and the present invention were, at the time the invention was made, subject to an obligation of assignment to a common assignee, Sandia Corporation. Therefore, Dohrmann is

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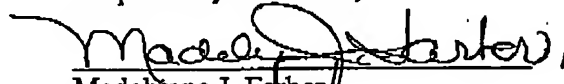
disqualified as prior art against the present invention. Applicant respectfully submits that Claims 1-22 are in allowable form and requests reconsideration.

In view of the foregoing, Applicant respectfully submits that Claims 1-22, as amended, are allowable and requests notice to that effect.

Further and favorable consideration is respectfully requested.

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Respectfully submitted,

  
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